TITLE OF THE INVENTION:	FIRST NAMED INVENTOR:	APPLICATION NO.
VEHICLE SUSPENSION SYSTEM, PARTICULARLY FOR ROAD AND OFF ROAD VEHICLES	WIESLAW JULIAN OLEDZKI	10/019,083

AMENDMENTS TO THE CLAIMS

Claim 1 (canceled). A vehicle suspension system, particularly for road and off-road ones, comprising springs, distinguished for the fact that the suspension system comprises at least one flat or spatial four-link mechanism (K), (M), (W) and (D), three kinematic pairs of which are rotational ones while the fourth one is either a rotational or a sliding one, wherein two links are made in the form of eccentrics and one link is made in the form of eccentric or a slider, wherein one of the links of said mechanism is coupled with a vehicle wheel, the other one is coupled with a spring (S), and the whole mechanism is fastened to a vehicle frame through yet another link of said mechanism, to obtain non-linear dependence of deformation of the spring on the vehicle wheel flex.

Claim 2 (canceled). A vehicle suspension system according to claim 1, distinguished for the fact that the suspension mechanism, as its four links, comprises a shaft (W) fitted with an eccentric (MW), the latter being coupled rotationally with an intermediate eccentric (M), the latter being coupled rotationally with a disc (D), wherein the shaft (W) and the disc (D) pivot directly in a body (K), said body (K) being fastened to a vehicle frame, and said shaft (W) being coupled rigidly with a wheel arm, and wherein the disc (D) is coupled with one end of the spring (S) the other end of which is fixed to the body (K) or directly to the vehicle frame, assuming the axes of rotation of all the kinematic pairs of said suspension mechanism are parallel to each other.

Claim 3 (canceled). A vehicle suspension system according to claim 1, distinguished for the fact that the suspension mechanism, as its four links, comprises a shaft (W) fitted with an eccentric (MW), the latter being coupled rotationally with an intermediate eccentric (M), the latter being coupled rotationally with a disc (D), wherein the shaft (W) and the disc (D) pivot directly in a body (K), said disc (D) being coupled rigidly with the wheel arm, and said shaft (W) being coupled with one end of the spring (S) the other end of which is fixed to the body (K) or directly to a vehicle frame, assuming the axes of rotation of all the kinematic pairs of said suspension mechanism are parallel to each other.

Claim 4 (canceled). A vehicle suspension system according to claim 1, distinguished for the fact that the suspension mechanism contains a shaft (W) fitted with a flange (Z) and an eccentric (MW), the latter being coupled rotationally with an intermediate eccentric (M), the latter being coupled rotationally with a disc (D), wherein the shaft (W) and the disc (D) pivot in a body (K), said shaft (W) being fastened to a vehicle frame through the flange (Z), said intermediate eccentric (M) being coupled rigidly with a vehicle wheel arm (H), and said body (K) being coupled rigidly with one end of a spring (S) the other end of which is fixed to the shaft (W) or directly to the vehicle frame, assuming the axes of rotation of all the kinematic pairs of the suspension mechanism are parallel to each other.

Claim 5 (canceled). A vehicle suspension system according to claim 1, distinguished for the fact that the suspension mechanism, as its four links, comprises a shaft (W) fitted with an eccentric (MW), the latter being coupled rotationally with an intermediate eccentric (M), the latter being coupled rotationally with a disc (D), wherein the shaft (W) and the disc (D)

pivot directly in a body (K), said body (K) being fastened to a vehicle frame, said shaft (W) being coupled rigidly with a vehicle wheel arm, and the intermediate eccentric (M) being coupled with one end of an U-shaped torsion bar the other end of which is fixed to the intermediate eccentric of an analogous mechanism of a suspension of the other wheel, assuming the axes of rotation of all the kinematic pairs of the suspension mechanism are parallel to each other.

Claim 6 (canceled). A vehicle suspension system according to claim 1, distinguished for the fact that the suspension mechanism, as its four links, comprises a shaft (W) fitted with an eccentric (MW), the latter being coupled rotationally with and intermediate eccentric (M), the latter being coupled rotationally with a disc (D), wherein the shaft (W) and the disc (D) pivot directly in a body (K), said body (K) being fastened to a vehicle frame, said shaft (W) being coupled rigidly with a wheel arm, and said disc being coupled with one end of a spring (S) the other end of which is fixed to the body (K) or directly to the vehicle frame, assuming the axes of rotation of all the kinematic pairs of said suspension mechanism intersect at a precisely one point P, to obtain a required position of the spring relative to the vehicle wheel.

Claim 7 (canceled). A vehicle suspension system according to claim 1, distinguished for the fact that the suspension mechanism, as its four links, comprises a shaft (W) fitted with an eccentric (MW), the latter being coupled rotationally with an intermediate eccentric (M), the latter being coupled rotationally with a disc (D), wherein the shaft (W) and the disc (D) pivot directly in a body (K), said disc (D) being coupled rigidly with a wheel arm, said shaft (W) being coupled with one end of a spring (S) the other end of which is fastened to the body (K) or directly to a vehicle frame, assuming the axes of rotation of all the kinematic pairs of said suspension mechanism intersect at a precisely one point P, to obtain a required position of the spring relative to the vehicle wheel.

Claim 8 (canceled). A vehicle suspension system according to claim 1, distinguished for the fact that the suspension mechanism comprises a shaft (W) fitted with a flange (Z) and an eccentric (MW), the latter being coupled rotationally with an intermediate eccentric (M), the latter being coupled rotationally with a disc (D), wherein the shaft (W) and the disc (D) pivot in a body (K), said shaft (W) being fastened to a vehicle frame with the help of the flange (Z), said intermediate eccentric (M) being coupled rigidly with a wheel arm, and said body (K) being coupled rigidly with one end of a spring (S) the other end of which is fixed to the shaft (W) or directly to the vehicle frame, assuming the axes of rotation of all the kinematic pairs of said suspension mechanism intersect at a precisely one point P, to obtain a required position of the spring relative to the vehicle wheel.

Claim 9 (canceled). A vehicle suspension system according to claim 1, distinguished for the fact that the suspension mechanism, as its four links, comprises a shaft (W) fitted with an eccentric (MW), the latter being coupled rotationally with an intermediate eccentric (M), the latter being coupled rotationally with a disc (D), wherein the shaft (W) and the disc (D) pivot directly in a body (K), said body (K) being fastened to a vehicle frame, said shaft (W) being coupled rigidly with a vehicle wheel arm and said intermediate eccentric (M) being coupled with one end of an U-shaped torsion bar the other end of which is fixed to the intermediate eccentric of an analogous mechanism of a suspension of the other wheel, assuming the axes of rotation of all the kinematic pairs of said suspension mechanism

intersect at a precisely one point P, to obtain a required position of the spring relative to the vehicle wheel.

Claim 10 (canceled). A vehicle suspension system according to claim 1, distinguished for the fact that the suspension mechanism comprises a shaft (W) fitted with three eccentrics (MW1), (MW2) and (MW3), the latter being coupled rotationally with corresponding intermediate eccentrics (M1), (M2) and (M3), the latter being coupled rotationally with corresponding sliders (D1), (D2) and (D3), wherein the shaft (W) pivots directly in a body (K), and the sliders (D1), (D2) and (D3) are sliding fitted in the body (K), said body (K) being fastened to a vehicle frame, the slider (D2) being coupled with a vehicle axle and the sliders (D1) and (D3) being coupled with a spring, which in turn, is fastened to the vehicle frame.

Claim 11 (canceled). A vehicle suspension system comprising a spring (S) and at least one flat or spatial four-link mechanism (K, M, W, D), at least three kinematic pairs of which are rotational ones, wherein one of the links of said mechanism is coupled with a vehicle wheel, another of said links is coupled with the spring (S), and the whole mechanism is fastened to a vehicle frame through yet another link of said mechanism, to obtain non-linear dependence of deformation of the spring on the vehicle wheel flex, characterized in that, three of said links are made in the form of an eccentric, whereby said four-link mechanism (K, M, W, D) comprises a shaft (W) fitted with an eccentric (MW), the latter being coupled rotationally with an intermediate eccentric (M), the latter being coupled rotationally with a disc (D), wherein the shaft (W) and the disc (D) pivot directly in a body (K).

Claim 12 (canceled). A vehicle suspension system according to claim 11, characterized in that the axes of rotation of all the kinematic pairs of said suspension mechanism are parallel to each other.

Claim 13 (canceled). A vehicle suspension system according to claim 11, characterized in that the axes of rotation of all the kinematic pairs of said suspension mechanism intersect at a precisely one point P, to obtain a required position of the spring relative to the vehicle wheel.

Claim 14 (canceled). A vehicle suspension system according to claim 12 or claim 13, characterized by said body (K) being fastened to a vehicle frame, and said shaft (W) being coupled rigidly with a wheel arm, and wherein the disc (D) is coupled with one end of the spring (S) the other end of which is fixed to the body (K) or directly to the vehicle frame.

Claim 15 (canceled). A vehicle suspension system according to claim 12 or claim 13, characterized by said body (K) being fastened to a vehicle frame, and said disc (D) being coupled rigidly with a wheel arm, and said shaft (W) being coupled with one end of a spring (S) the other end of which is fixed to the body (K) or directly to the vehicle frame.

Claim 16 (canceled). A vehicle suspension system according to claim 12 or claim 13, characterized by said shaft (W) being fastened to a vehicle frame through the flange (Z), said intermediate eccentric (M) being coupled rigidly with a vehicle wheel arm (H), and said body (K) being coupled rigidly with one end of a spring (S) the other end of which is fixed to the shaft (W) or directly to the vehicle frame.

Claim 17 (canceled). A vehicle suspension system according to claim 12 or claim 13, characterized by said body (K) being fastened to a vehicle frame, said shaft (W) being coupled rigidly with a vehicle wheel arm, and the intermediate eccentric (M) being coupled with one end of an U-shaped torsion bar the other end of which is fixed to the intermediate eccentric of an analogous mechanism of a suspension of the other wheel.

Claim 18 (withdrawn). A vehicle suspension system comprising a spring (S) and at least one flat or spatial four-link mechanism (K, M, W, D), three kinematic pairs of which are rotational ones and one of the links being made in the form of a slider such that the fourth kinematic pair is a sliding one, wherein one of the links of said mechanism is coupled with a vehicle wheel, another of said links is coupled with the spring (S), and the whole mechanism is fastened to a vehicle frame through yet another link of said mechanism, to obtain non-linear dependence of deformation of the spring on the vehicle wheel flex, characterized in that, two of said links are made in the form of an eccentric, whereby said four-link mechanism comprises s shaft (W) fitted with an eccentric (MW), the latter being coupled rotationally with an intermediate eccentric (M), the latter being coupled rotationally with a slider (D), wherein the shaft (W) pivots directly in a body (K) and the slider is slidingly fitted in the body (K).

Claim 19 (withdrawn). A vehicle suspension system according to claim 18, characterized by a shaft (W) fitted with three eccentrics (MW1), (MW2) and (MW3), the latter being coupled rotationally with corresponding intermediate eccentrics (M1), (M2) and (M3), the latter being coupled rotationally with corresponding sliders (D1), (D2) and (D3), wherein the sliders (D1), (D2) and (D3) are slidingly fitted in the body (K), said body (K) being fastened to a vehicle frame, the slider (D2) being coupled with a vehicle axle and the sliders (D1) and (D3) being coupled with a spring, which, in turn, is fastened to the vehicle frame.

Claim 20 (new). A vehicle suspension system comprising a spring and at least one four-link mechanism, at least three of the links are rotationally coupled links which are able to move with respect to the reminder of the four-link mechanism, wherein a first one of said links of said mechanism is coupled with a vehicle wheel, a second one of said links is coupled with a spring, and the entire four-link mechanism is fastened to a vehicle frame through a third one of said links of said mechanism, to obtain non-linear deformation of the spring with vertical movement of the wheel, wherein three of said links are eccentric in form, whereby one of said links of said four-link mechanism is a shaft with an eccentric form, the eccentric form being coupled rotationally with a fourth link of said four-link mechanism, which is an intermediate eccentric link, the latter being coupled rotationally with the second one of said links, which is a disc, wherein said shaft and the disc pivot within the body of the third one of said links of said four-link mechanism.

Claim 21 (new). A vehicle suspension according to claim 20, characterized in that the axes of rotation of all the rotationally coupled links are parallel to each other.

Claim 22 (new). A vehicle suspension according to claim 20, characterized in that the axes of rotation of all the rotationally coupled links of the suspension mechanism intersect at precisely one point P, to obtain a required position of the spring relative to the vehicle wheel.

Claim 23 (new). A vehicle suspension system according to claim 21 or claim 22, characterized by said body of said third link being fastened to the vehicle frame and said shaft being rigidly coupled with a wheel arm and wherein the disc is coupled to one end of the spring and the other end of the spring is fixed to the body of a link of a second four-link mechanism or fixed directly to the vehicle frame.

Claim 24 (new). A vehicle suspension system according to claim 21 or claim 22, characterized by said body of said third link being fastened to the vehicle frame and said disc being rigidly coupled with a wheel arm and said shaft being coupled to one end of the spring and the other end of the spring is fixed to the body of a link of a second four-link mechanism or fixed directly to the vehicle frame.

Claim 25 (new). A vehicle suspension system according to claim 21, characterized by said shaft (W) having a flange and the shaft is fastened to the vehicle frame at the flange, said intermediate eccentric link being coupled rigidly with a vehicle wheel arm, and said body of the third one of the links being coupled rigidly with one end of the spring, and the other end of the spring is coupled rigidly with the vehicle wheel arm or fixed to the shaft of a second four-link mechanism or directly to the vehicle frame.

Claim 26 (new). A vehicle suspension system according to claim 21 or claim 22, characterized by said disc (D) having a flange and the disc is fastened to the vehicle frame at the flange, said shaft being coupled rigidly with a vehicle wheel arm, and said body of the third one of the links being coupled rigidly with one end of the spring, and the other end of the spring is coupled rigidly with the vehicle wheel arm or fixed to the disc of a second four-link mechanism or directly to the vehicle frame.

Claim 27 (new). A vehicle suspension system according to claim 21 or claim 22, characterized by the body of the third one of said links being fastened to the vehicle frame, said shaft being coupled rigidly with a vehicle wheel arm, and the intermediate eccentric link being coupled with one end of the spring, and the spring being a U-shaped torsion bar, with the other end of the spring fixed to the intermediate eccentric of a second four-link mechanism which is part of a suspension arrangement of a second wheel.